

\* 6:30am - 9:00pm Monday through Friday \*  
\* 7:30am - 5:00pm Saturday, Sunday, Holidays \*  
\* \*  
\* APS is unavailable Thanksgiving Day, Christmas Day, \*  
\* and New Year's Day. \*  
\* \*  
\* \* \* \* \*

FILE 'USPAT' ENTERED AT 14:05:14 ON 09 APR 1999

\* \* \* \* \*  
\* W E L C O M E T O T H E \*  
\* U . S . P A T E N T T E X T F I L E \*  
\* \* \* \* \*

=> s magneto-optical

10279 MAGNETO  
285854 OPTICAL  
L1 4639 MAGNETO-OPTICAL  
(MAGNETO(W) OPTICAL)

=> s l1 and ferromagnetic

21569 FERROMAGNETIC  
L2 256 L1 AND FERROMAGNETIC

=> s width and thickness

549072 WIDTH  
580002 THICKNESS  
L3 233394 WIDTH AND THICKNESS

=> s l3 and l2

L4 81 L3 AND L2

=> s spacing and l4

275590 SPACING  
L5 33 SPACING AND L4

=> d pno 1-33

1.	5,886,959	[IMAGE AVAILABLE]
2.	5,793,711	[IMAGE AVAILABLE]
3.	5,736,856	[IMAGE AVAILABLE]
4.	5,660,929	[IMAGE AVAILABLE]
5.	5,631,559	[IMAGE AVAILABLE]
6.	5,631,093	[IMAGE AVAILABLE]
7.	5,612,131	[IMAGE AVAILABLE]
8.	5,602,819	[IMAGE AVAILABLE]
9.	5,577,016	[IMAGE AVAILABLE]
10.	5,567,523	[IMAGE AVAILABLE]
11.	5,528,564	[IMAGE AVAILABLE]
12.	5,492,572	[IMAGE AVAILABLE]
13.	5,490,910	[IMAGE AVAILABLE]
14.	5,486,857	[IMAGE AVAILABLE]
15.	5,463,609	[IMAGE AVAILABLE]
16.	5,457,298	[IMAGE AVAILABLE]
17.	5,412,626	[IMAGE AVAILABLE]
18.	5,283,130	[IMAGE AVAILABLE]
19.	5,262,800	[IMAGE AVAILABLE]
20.	5,232,569	[IMAGE AVAILABLE]
21.	5,150,351	[IMAGE AVAILABLE]
22.	5,109,373	[IMAGE AVAILABLE]

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PLEASE ENTER HOST PORT ID:
PLEASE ENTER HOST PORT ID:x
LOGINID:d266txd
PASSWORD:
TERMINAL (ENTER 1, 2, 3, 4, OR ?):□3
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Welcome to MESSENGER (APS Text) at USPTO

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The USPTO production files are current through:

APRIL 06,1999 for U.S. Patent Text Data. \*

APRIL 06,1999 for U.S. Current Classification Data. \*

APRIL 06,1999 for U.S. Patent Image Data. \*

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AFTER PRODUCTION HOURS (AT 10:00 P.M.) ON WEDNESDAY, 01/27/99,  
SEVERAL PTONET DEVICES WILL BE RECONFIGURED TO ENHANCE  
NETWORK OPERATIONS. USERS OF PATENT EXAMINER SEARCH TOOLS  
MUST RE-BOOT THEIR INDIVIDUAL DESKTOP WORKSTATIONS AT THE  
START OF THE BUSINESS DAY ON THURSDAY, 01/28/99 TO INSURE  
THAT NECESSARY FILES ON THEIR WORKSTATION GET UPDATED. THIS  
WILL ENSURE IMMEDIATE AND ACCURATE ACCESS TO ALL OF THE  
PATENT EXAMINER SEARCH TOOLS. THANK YOU FOR YOUR COOPERATION

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* * * * *
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\* PLEASE USE 305-9000 FOR NEW TELEPHONE NUMBER \*

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More U.S. patent data is now available on APS. The new  
USOCR file contains patents issued in 1970, plus some  
patents that were missing from the USPAT file. See the  
Patents News Folder under the Public Folders in e-mail for  
more information on using the new file. Thank you.

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* * * * *
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DISCLAIMER:  
Neither the United States Government, nor any agency  
thereof, nor any of their contractors, subcontractors or  
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particular purpose; nor assumes any legal liability or  
responsibility for any party's use, or the results of  
such, of the data.

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Help Desk --> 703-305-9000

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The Help Desk is staffed for APS support 7 days/week.  
Monday through Friday: 6:30am - 9:00pm  
Saturday, Sunday, Holidays: 8:30am - 5:00 pm

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The Help Desk staff at this number will handle all APS  
related questions.

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The APS is available:

23.	5,103,351	[IMAGE AVAILABLE]
24.	5,091,021	[IMAGE AVAILABLE]
25.	5,089,060	[IMAGE AVAILABLE]
26.	4,661,875	[IMAGE AVAILABLE]
27.	4,442,414	[IMAGE AVAILABLE]
28.	4,378,951	[IMAGE AVAILABLE]
29.	3,831,156	[IMAGE AVAILABLE]
30.	3,806,903	[IMAGE AVAILABLE]
31.	3,752,563	[IMAGE AVAILABLE]
32.	3,643,233	[IMAGE AVAILABLE]
33.	3,582,570	[IMAGE AVAILABLE]

=> d his

(FILE 'USPAT' ENTERED AT 14:05:14 ON 09 APR 1999)

L1	4639 S MAGNETO-OPTICAL
L2	256 S L1 AND FERROMAGNETIC
L3	233394 S WIDTH AND THICKNESS
L4	81 S L3 AND L2
L5	33 S SPACING AND L4

=> s 14 and 369/clas

	26128 369/CLAS
L6	36 L4 AND 369/CLAS

=> d pno 1-36

1.	5,886,959	[IMAGE AVAILABLE]
2.	5,862,105	[IMAGE AVAILABLE]
3.	5,793,711	[IMAGE AVAILABLE]
4.	5,783,320	[IMAGE AVAILABLE]
5.	5,679,455	[IMAGE AVAILABLE]
6.	5,660,929	[IMAGE AVAILABLE]
7.	5,638,344	[IMAGE AVAILABLE]
8.	5,637,411	[IMAGE AVAILABLE]
9.	5,621,706	[IMAGE AVAILABLE]
10.	5,602,819	[IMAGE AVAILABLE]
11.	RE 35,396	[IMAGE AVAILABLE]
12.	5,577,016	[IMAGE AVAILABLE]
13.	5,572,490	[IMAGE AVAILABLE]
14.	5,529,854	[IMAGE AVAILABLE]
15.	5,528,564	[IMAGE AVAILABLE]
16.	5,512,366	[IMAGE AVAILABLE]
17.	5,463,609	[IMAGE AVAILABLE]
18.	5,430,695	[IMAGE AVAILABLE]
19.	5,412,626	[IMAGE AVAILABLE]
20.	5,339,298	[IMAGE AVAILABLE]
21.	5,335,213	[IMAGE AVAILABLE]
22.	5,325,345	[IMAGE AVAILABLE]
23.	5,325,344	[IMAGE AVAILABLE]
24.	5,241,520	[IMAGE AVAILABLE]
25.	5,218,581	[IMAGE AVAILABLE]
26.	5,172,364	[IMAGE AVAILABLE]
27.	5,150,351	[IMAGE AVAILABLE]
28.	5,112,701	[IMAGE AVAILABLE]
29.	5,109,373	[IMAGE AVAILABLE]
30.	5,018,119	[IMAGE AVAILABLE]
31.	5,005,093	[IMAGE AVAILABLE]
32.	4,992,896	[IMAGE AVAILABLE]
33.	4,922,462	[IMAGE AVAILABLE]
34.	4,899,238	[IMAGE AVAILABLE]
35.	4,686,661	[IMAGE AVAILABLE]
36.	4,661,875	[IMAGE AVAILABLE]

=> File JPoabs

FILE 'JPOABS' ENTERED AT 14:23:01 ON 09 APR 1999

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* * * * *
*   J A P A N E S E   P A T E N T   A B S T R A C T S   *
*
* DATA IS LOADED THROUGH DECEMBER 24, 1996, FOR THE JAPANESE *
* PATENT OFFICE ABSTRACT (JPOABS) FILE. NEW RECORDS ARE NOT *
* BEING ADDED. PLEASE USE THE GPI-JPO FILE (JPO) WHICH IS   *
* CURRENT THROUGH DECEMBER 31, 1998 (SEE BELOW).            *
* * * * *
*   GLOBAL PATENT INFORMATION-JAPANESE PATENT OFFICE FILE   *
*                   (GPI-JPO FILE)                           *
*
* THE FILE IS CURRENT THROUGH DECEMBER 31, 1998.            *
* * * * *
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IRD CNOABS

=> d his

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(FILE 'USPAT' ENTERED AT 14:05:14 ON 09 APR 1999)
L1      4639 S MAGNETO-OPTICAL
L2      256 S L1 AND FERROMAGNETIC
L3      233394 S WIDTH AND THICKNESS
L4      81 S L3 AND L2
L5      33 S SPACING AND L4
L6      36 S L4 AND 369/CLAS
```

FILE 'JPOABS' ENTERED AT 14:23:01 ON 09 APR 1999

=> s 12

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10554 MAGNETO
220279 OPTICAL
7830 MAGNETO-OPTICAL
      (MAGNETO(W)OPTICAL)
11345 FERROMAGNETIC
L7      74 L1 AND FERROMAGNETIC
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=> s 13

```
143731 WIDTH
184796 THICKNESS
L8      16863 WIDTH AND THICKNESS
```

=> s 18 and 17

L9 1 L8 AND L7

=> d cit,ab

1. 05-159389, Jun. 25, 1993, **MAGNETO-OPTICAL** RECORDING MEDIUM;  
YASUO SHIBATA, et al., G11B 11/10

05-159389

L9: 1 of 1

ABSTRACT:

PURPOSE: To facilitate the selection of the constituting materials of magnetic layers by providing horizontally magnetized films and specific adjusting thin film layers between the 4th, 3rd, and 2nd magnetic layers and providing the same adjusting thin film layer between the 2nd and 1st magnetic layers.

CONSTITUTION: **Ferromagnetic** metallic atom layer for the horizontally magnetized films and the thin layers contg., for example, one of Co, Fe and Ni and have 1 to 5.ANG. **thickness** are provided between the 4th, 3rd, and 2nd magnetic layers and this thin layer is provided between the 2nd and 1st magnetic layers as well. The magnetic moments between the heavy rare earth metal elements and transition metals in the magnetic layers on both sides are adequately bonded by this thin layer. Then, the magnetic layers functioning as the perpendicularly magnetized films on both sides of the horizontally magnetized layers can be arbitrarily set in the coercive forces of the respective magnetic layers if only the cross relation of the Curie temp. is determined as prescribed and, therefore the **magneto-optical** disk having prescribed characteristics is easily obtd. The magnetical exchange interaction that the 3rd and 4th magnetic layers act on the 2nd magnetic layer can be adjusted by the **ferromagnetic** metallic atom layers as the horizontal' magnetized films. The **width** of the selection of the constituting materials is widened according to this constitution.